Federal Aviation Administration

Aircraft Certification Systems Evaluation Program (ACSEP) FY 2005 Report

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Table of Contents

1. Introduction 3

1.1 Report Structure 3
1.2 Program Overview of ACSEP 4
1.3 Significant Events During the Fiscal Year 4
1.3.1 Certificate Management Information System 4
1.4 Overview of the ACSEP Activity 4
1.5 The Data Collected During an ACSEP Evaluation 8
1.5.1 The Various Types of Noncompliances 9
1.5.2 Noncompliances Classified into System Elements 9
1.5.3 System Elements Classified into Criteria 10

2. Summary and Conclusions Based on the Data 11

3. Data Analysis — Manufacturing Facilities 13

3.1 Safety Related Noncompliances 13
3.2 Systemic Noncompliances 13
3.3 Isolated Noncompliances 14
3.4 CFR-Based Noncompliances 14
3.5 System Element Noncompliances 15
3.5.1 Similarity Among Approval Types 15
3.6 Analysis of Evaluation Criteria 20
3.6.1 Systemic Noncompliances 21
3.6.2 A Facility Focus 21
3.6.3 A Facility Focus (Procedures In Place) 23
3.7 Delegated Facilities 25
3.7.1 Designated Alteration Stations (DAS) Facilities 25
3.7.2 Special Federal Aviation Regulation No. 36 (SFAR-36) Facilities 26
3.7.3 Delegation Option Authorization (DOA) Facilities 26

4. Improvement Emphasis 27

4.1 Industry Feedback 27
4.2 Lessons Learned 29
FY 2005 ACSEP Report Feedback Information 1
Washington, DC 20591 1

LIST OF FIGURES

Figure 1-1.—Annual ACSEP evaluations. 5
Figure 1-2.—Distribution of ACSEP evaluations at manufacturing facilities by facility type — domestic and international combined..... 6
Figure 1-3.—Distribution of ACSEP evaluations at manufacturing facilities by directorate — domestic and international combined..... 7
Figure 1-4.—Distribution of ACSEP evaluations at delegated facilities by delegation type. 8
Figure 1-5.—Distribution of ACSEP evaluations at delegated facilities by directorate. .. 8
Figure 3-1.—Systemic Noncompliances — all facility types. 13
Figure 3-2.—Isolated Noncompliances — all facility types. 14
Figure 4-1.—ACSEP as graded by industry..... 28
Figure 4-2.—Trend of lessons learned — favorable experiences. 29
Figure 4-3.—Trend of lessons learned — no difficulties with Order 8100.7 29
Figure 4-4.—Trend of lessons learned — evaluation completed. 30
Figure 4-5.—Trend of lessons learned — no new criteria needed. 30
Figure 4-6.—Distribution of subsystems not evaluated. 31

LIST OF TABLES

TABLE 1-1.— The population of PAHs for fiscal years 1998 through 2005 6
TABLE 1-2.— The population of delegated facilities for fiscal 2005 7
TABLE 3-1.— CFR-based noncompliances 15
TABLE 3-2.— Counts of PMA noncompliances 16
TABLE 3-3.— Counts of PC noncompliances 17
TABLE 3-4.— Counts of TSO authorization noncompliances 18
TABLE 3-5.— Counts of all noncompliances 19
TABLE 3-6.— Summary of the most prevalent systemic noncompliances — FY 2005 ... 20
TABLE 3-7.— Most reported criteria with systemic noncompliances 21
TABLE 3-8.— Predominant systemic noncompliances — PC holders 22
TABLE 3-9.— Predominant systemic noncompliances — PMA holders 22
TABLE 3-10.— Predominant systemic noncompliances — TSO authorization holders .. 23
TABLE 3-11.— Predominant systemic noncompliances — PC holders with applicable procedures 24
TABLE 3-12.— Predominant systemic noncompliances — PMA holders with applicable procedures 24
TABLE 3-13.— Predominant systemic noncompliances — TSO authorization holders with applicable procedures 24
TABLE 3-14.— DAS noncompliances by criteria 25
TABLE 3-15.— SFAR-36 noncompliances by criteria 26
TABLE 4-1.— Distribution of industry feedback 27
TABLE 4-2.— Comments received from lessons learned sheets 32

EXECUTIVE SUMMARY

This report documents the fiscal year (FY) 2005 results of the Federal Aviation Administration (FAA) Aircraft Certification Service (AIR) Aircraft Certification Systems Evaluation Program (ACSEP).

The ACSEP was designed to determine if FAA production approval holders and delegated facilities are complying with the requirements of applicable Code of Federal Regulations (CFR) and the procedures established to meet those requirements. It also surveys the application of standardized industry practices, not required by the CFR or FAA-approved data, to identify national trends that may require development of new or revised regulations, policy, or guidance. The elements of the evaluation are referred to as criteria. Data was collected on noncompliance and applicability with respect to those criteria. The background of ACSEP, a program overview, the process for scheduling evaluations, and training evaluators are discussed in Addendum A: History and Background of ACSEP. The Addendum is located on the Internet at http://www.faa.gov/aircraft/air_cert/continued_operation/acsep. Click History and Background of ACSEP.

Analysis Results and Conclusions

Of the 453 noncompliances recorded at production approval holder (PAH) facilities in FY 2005, there was one safety related noncompliance recorded which identified an immediate safety concern. This noncompliance was recorded for failure to report any failure as required by 14 CFR § 21.3. There were 28 noncompliances recorded at 9 Delegated Facilities. There were no safety related noncompliances recorded at Delegated Facilities.

The system elements and sub-elements where the most noncompliances were reported for PAHs are as follows:

Manufacturing and Special Manufacturing Processes - Specific functions and operations necessary for the fabrication and inspection of parts and assemblies (e.g., machining, riveting, and assembling). Also included are methods whereby materials, parts, or assemblies are worked or fabricated through a series of precisely controlled steps, and which undergo physical, chemical, or metallurgical transformation.

Material Handling, Receiving, and Storage - The methods used to accept and protect raw materials, parts, subassemblies, assemblies, and completed products during receipt, manufacture, inspection, test, storage and preparation for shipment.

Design Data Control - The planning and integration of the evaluated facility's procedures for continuously maintaining the integrity of design data, as approved by the FAA or FAA-delegated representatives, in the completed product.

Airworthiness Determination - The function that provides for evaluation of completed products/parts thereof, and related documentation, to determine conformity to FAA-approved design data and their condition for safe operation.

Supplier Control - The system by which the evaluated facility ensures that supplier materials, parts, and services conform to FAA-approved design.

A more detailed discussion of the data is presented throughout Section 3 of the report.

The percentage of teams reporting favorable experiences was consistent with FY 2004. There were fewer reports of teams having difficulties using FAA Order 8100.7, Aircraft Certification Systems Evaluation Program. This can be attributed to the teams having greater familiarity with Order 8100.7. The percentage of evaluations completed remained the same as last year. As in previous years, the evaluation teams did not, as a whole, document the need for new criteria. See Section 4 for additional information on the continuous improvement program of ACSEP.

FY 2005 Report

1. Introduction

This report summarizes the results of the Aircraft Certification Systems Evaluation Program (ACSEP) and provides a comprehensive view of the program's results from October 2004 through September 2005. The presentation of the data provides insight into procedural compliance trends with production approval holders.

1.1 Report Structure

Section 1 provides an introduction and overview of the program status.

Section 2 provides a summary of the data presented in this report.

Section 3 provides a consolidation of the data that led to the conclusions presented in Section 2.

Section 4 provides the results of the ACSEP improvement effort including feedback from industry, lessons learned, and comments received regarding the ACSEP evaluations.

There is one appendix: Appendix A provides definitions. Previous ACSEP Annual Reports included an appendix providing detailed data tables regarding the number and percentage of occurrence of a noncompliance for each specific criteria. This information will now be provided on the Internet and may also be requested from AIR-200 at (202) 267-8361. The Internet address is: http://www.faa.gov/aircraft/air_cert/continued_operation/acsep/reports.

1.2 Program Overview of ACSEP

This subsection provides an overview of the ACSEP and a brief history of its growth. The ACSEP was developed as a result of numerous years of experience with Quality Assurance Systems Analysis Review (QASAR) audits and observations made during an interim audit program called "Operation SNAPSHOT."

a. ACSEP evaluations are performed in accordance with consistent and standardized evaluation criteria.

b. The evaluation criteria used during an ACSEP evaluation were developed with extensive input and cooperation from the aviation industry.

c. ACSEP evaluation results are maintained in a centralized database.

d. An annual report of the aggregate ACSEP evaluation results is published.

e. ACSEP actively incorporates the evaluation of facilities with engineering delegations. The facilities that are evaluated by ACSEP are:

- Approved Production Inspection System (APIS)
- Production Certificate (PC) and Production Certificate Extension (PCEX)
- Parts Manufacturer Approval (PMA)
- Technical Standard Order (TSO) authorization
- Delegation Option Authorization (DOA)
- Designated Alteration Station (DAS)
- Special Federal Aviation Regulation No. 36 (SFAR-36)

1.3 Significant Events During the Fiscal Year

The following significant events either (1) changed policy that affects the structure of ACSEP, (2) are measures intended to improve PAH quality systems thereby reducing noncompliances, or (3) are significant activities initiated as a result of ACSEP evaluation activity.

1.3.1 Certificate Management Information System

The Certificate Management Information System (CMIS) is a browser-based information system designed to facilitate many of the functions associated with certificate management. CMIS was implemented on September 30, 2004. Therefore, in FY 2005, the documentation requirements in the ACSEP process were fully automated for the first time.

1.4 Overview of the ACSEP Activity

The transition from QASAR to ACSEP occurred in FY 1993. *Figure 1-1* shows a seven-year look back of the annual number of ACSEPs conducted from FY 1999 to FY 2005. The evaluation of delegated facilities began in FY 1998 after the release of Notice N8100.13, Aircraft Certification Systems Evaluation Program Criteria for Delegated Facilities.

The reduction in the number of ACSEP evaluations from FY 1999 thru FY 2005 is the result of (1) the transition of Category 3 part manufacturers from ACSEP to PI audits, (2) The full implementation of Resource Targeting, and (3) the implementation of improved certificate management procedures.

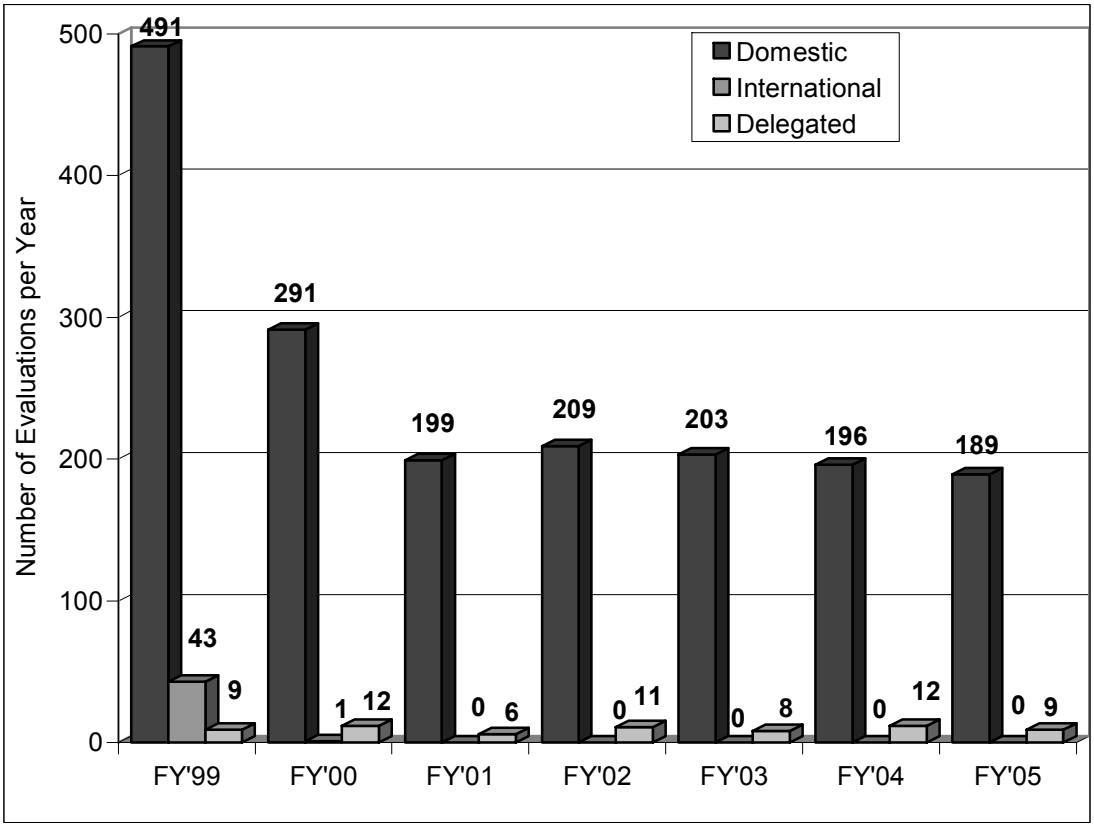

Figure 1-1.—Annual ACSEP evaluations.

Table 1-1 itemizes the population of various production approval holders[1].

TABLE 1-1.—The population[2] of PAHs for fiscal years 1998 through 2005

Fiscal Year	Parts Manufacturer Approval (PMA)[3]	Technical Standard Order (TSO) Authorization[3]	Production Certificate (PC)[3]	Approved Production Inspection Systems (APIS)	Total number of Production Approval Holders (PAH)
1998	1,211	307	98	5	1,621
1999	1,208	306	96	5	1,615
2000	1,229	302	109	9	1,649
2001	1,547	367	101	6	2,021
2002	1,466	349	92	3	1,910
2003	1,480	347	91	2	1,920
2004	1,493	351	98	3	1,945
2005	1,470	368	112	4	1,954

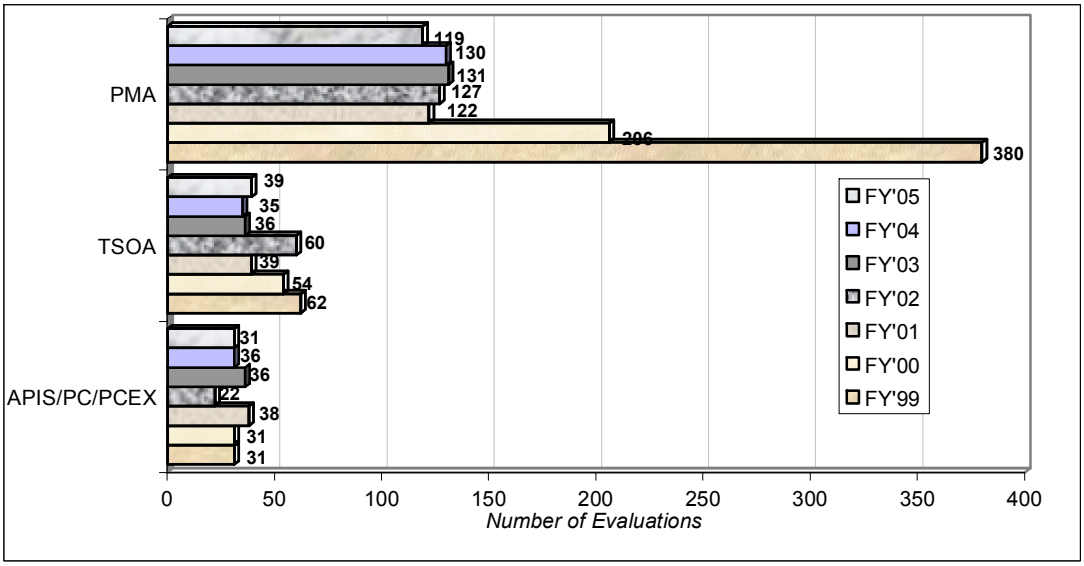

Figure 1-2.—Distribution of ACSEP evaluations at manufacturing facilities by facility type — domestic and international combined.

The distribution of ACSEP evaluations among the various facility types is presented in *Figure 1-2*. As presented in the FY 1999 ACSEP Annual Report, the reduction in the number of evaluations of PC holders, PC extensions, APIS, and TSO authorizations is a direct result of Resource Targeting for FY 1999. The number of evaluations of PMA

[1] Facilities with multiple production approvals are accounted for only once in accordance with the following order of precedence: PC (or PCEX), TSO, APIS, and PMA.
[2] This table is a compilation of data received from the individual directorates and is included in this report for reference only.
[3] Includes extensions.

holders decreased to a number that was consistent with both the population of PMA facilities and current ACSEP policy. The reduction in the number of FY 1999 thru FY 2005 evaluations is a direct result of removing Category 3 part manufacturers from the ACSEP process. A Category 3 part is one whose failure would have no effect on continued safe flight and landing of the aircraft.

ACSEP evaluations were conducted by the Aircraft Certification Service's four directorates. *Figure 1-3* shows the distribution of all manufacturing evaluations among the four directorates.

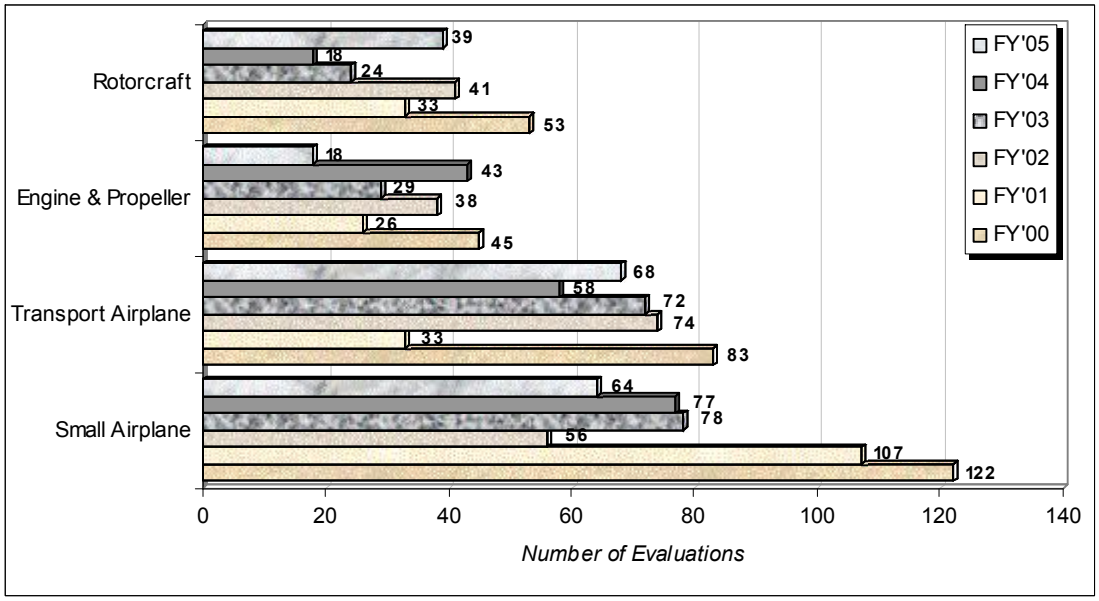

Figure 1-3.—Distribution of ACSEP evaluations at manufacturing facilities by directorate — domestic and international combined.

Table 1-2 lists the population of the various delegations. The distribution of the ACSEP evaluations among the various delegation types and among the various directorates is shown in *Figures 1-4* and *1-5,* respectively.

TABLE 1-2.—The population[4] of delegated facilities for fiscal 2005

Fiscal Year	Designated Alteration Station (DAS)	Special Federal Aviation Regulation No. 36 to CFR part 121 (SFAR-36)	Delegation Option Authorization (DOA)	Total number of Delegated Facilities
2001	33	13	6	52
2002	32	12	6	50
2003	35	14	6	55
2004	32	13	7	52
2005	36	13	6	55

[4] This table is a compilation of data received from AIR-100 and is included in this report for reference only.

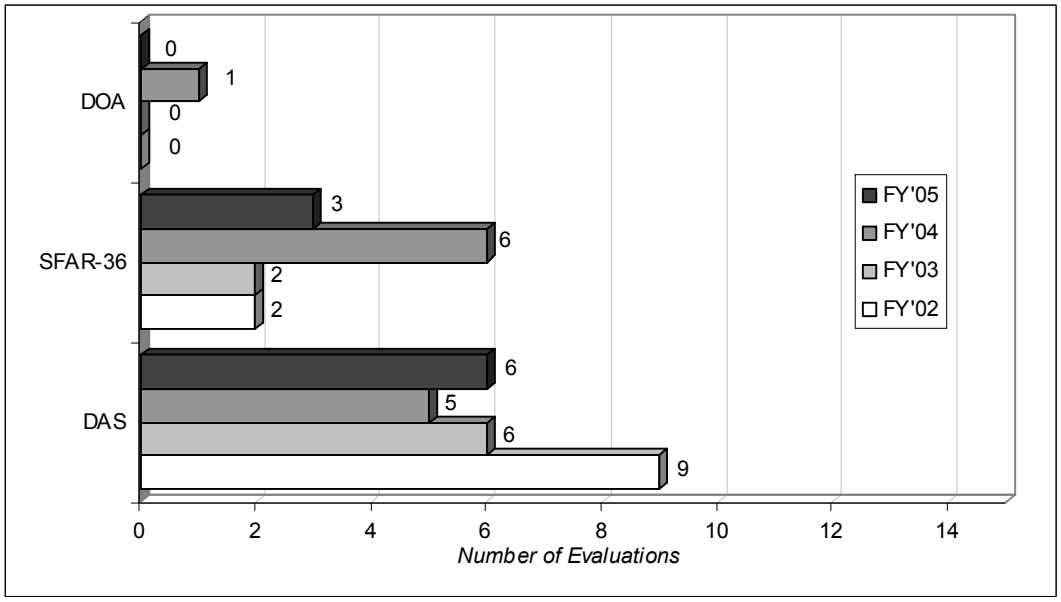

Figure 1-4.—Distribution of ACSEP evaluations at delegated facilities by delegation type.

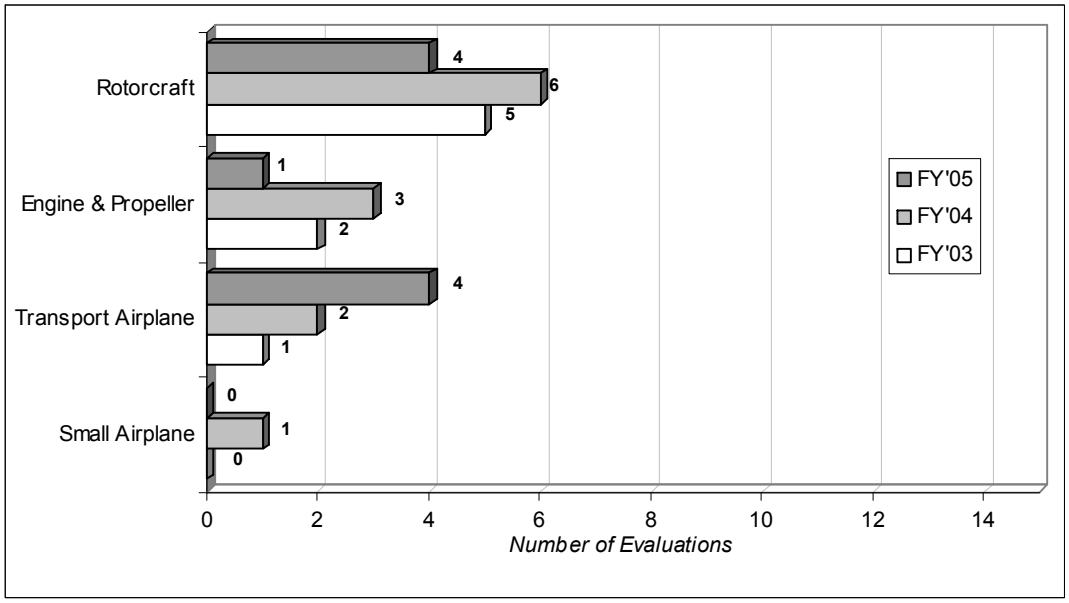

Figure 1-5.—Distribution of ACSEP evaluations at delegated facilities by directorate.

1.5 The Data Collected During an ACSEP Evaluation

The ACSEP was designed to determine if FAA production approval holders and delegated facilities are complying with the requirements of applicable CFR and the procedures established by these facilities to meet those requirements. It also surveys the application of standardized industry practices not required by the CFR to identify national noncompliances that may require development of new or revised regulations, policy, or

guidance. The elements of the evaluation are referred to as criteria. Data is collected on noncompliance, nonconformance, and applicability with respect to those criteria.

1.5.1 The Various Types of Noncompliances

During an ACSEP evaluation, the actual operating practices of a facility are compared to the CFR, FAA-approved data, and the facility's internal procedures. Any inconsistency discovered (termed "noncompliance" in this report) is classified and recorded. A noncompliance is classified by its type and the system element under which it is noted. There are four categories of noncompliances:

Safety Related Noncompliance – A safety-related noncompliance to the CFR, FAA-approved data, the facility's internal procedures, or purchase order requirements that compromises immediate continued operational safety and requires immediate corrective action.

Systemic Noncompliance – A noncompliance with an applicable CFR, FAA-approved data, the facility's internal procedures or purchase order requirements that is not safety-related and is systemic in nature, i.e., is pervasive, repeatable, and represents a breakdown in the quality control or inspection system.

Isolated Noncompliance – A noncompliance to the CFR, FAA-approved data, the facility's internal procedures, or purchase order requirements that is not safety-related and is of an isolated or nonsystemic nature, i.e., is not pervasive or repeatable, and does not represent a breakdown in the quality control or inspection system.

Certification-Related Noncompliance – A noncompliance to the CFR that is discovered in FAA-approved data and that is not safety-related.

The number and type of procedures that are FAA-approved varies widely among the various approval types. Additionally, the CFR requirements differ among the various approval types.

1.5.2 Noncompliances Classified into System Elements

Noncompliances are classified using system elements. In total, there are six system elements that represent a quality system for a production approval holder:

1. Organizational Management
2. Design Control
3. Software Quality Assurance
4. Manufacturing Processes
   (a) Manufacturing and Special Manufacturing Processes
   (b) Material Handling, Receiving & Storage
   (c) Airworthiness Determination
5. Manufacturing Controls
   (a) Statistical Quality Control
   (b) Tool and Gauge
   (c) Testing
   (d) Non-Destructive Testing
   (e) Nonconforming Material
6. Supplier Control

There are 10 system elements that represent a quality system for a delegated facility:

1. Organization and Responsibility
2. Design Data Approval
3. Testing
4. Airworthiness Certification
5. Continued Airworthiness
6. Project Management
7. Design Change Approval
8. Conformity Inspection
9. FAA Notification
10. Audit

1.5.3 System Elements Classified into Criteria

Each system element is further divided into "criteria." The criteria were developed with extensive assistance from industry in order to fully represent the detailed areas within each of the system elements. A process also exists to identify potential new criteria should the existing criteria not address a particular functional area within a system element. The subclassification of noncompliances into the detailed criteria allows the FAA to identify specific areas of concern and allows industry to focus corrective action on these specific areas of concern. For example, the supplier control system element is composed of 19 individual criteria. Specific areas of concern that may be identified include: the use of approved suppliers; periodic evaluations of suppliers; flow down of applicable technical and quality requirements to suppliers; raw material verification; and others.

Through the use of detailed criteria and their relevant system elements, quality management systems can be evaluated in a consistent manner.

2. Summary and Conclusions Based on the Data

a. The data contained herein can be summarized as following:

- There was one safety related noncompliance recorded at a PAH. The Safety-Related noncompliance was recorded for not reporting failures as required by 14 CFR § 21.3.
- There were 453 noncompliances recorded at production approval holder facilities and 28 noncompliances recorded at delegated facilities in FY 2005
- The majority of systemic noncompliances are concentrated within a few system elements: manufacturing and special manufacturing processes, material handling, design data control, airworthiness determination, and supplier control.
- Industry feedback with regard to the ACSEP evaluations continues to be very positive.
- Based on the statements recorded as lessons learned from the ACSEP evaluation, the ACSEP process is well understood and conducted accordingly.

b. Conclusions based on FY 2005 ACSEP evaluation data:

- Industry has used information contained in previous ACSEP reports as the basis for concentrating their efforts on supplier control. As a result of this focus, the percentage of noncompliances associated with supplier control has dropped from 19% in 2001 to 10% in 2005. However, a comprehensive review of all ACSEP evaluation data from 2002 through 2005 reveals very little change in the percentage of noncompliances associated with the other system elements. This has caused us to question the effectiveness of our CM program in today's manufacturing environment. As a result, AIR has begun several initiatives designed to review our existing program, identify areas/components of the program that need enhancement, and implement those enhancements. Some of the components of the CM program where enhancements have either begun or are under consideration include:

    1. The Next Generation Certificate Management initiative, designed to ensure that our CM efforts provide adequate safety oversight in the future. The current CM program was designed to address the manufacturing environment that was in place at the time. Over the past 10 years, the manufacturing environment has changed dramatically. However, our CM program has not changed accordingly. In addition, we have not assessed our CM program to determine whether it's as effective and viable as required, for today's manufacturing environment. For example, when the current CM program was developed, manufacturers produced most, if not all, of their major products/parts in their U.S. located facilities. However, in today's manufacturing environment, most major products/parts are produced at supplier facilities, many of which are located in foreign countries. This has challenged our ability and resources to effectively perform oversight responsibilities, especially in foreign countries.

2. Improvements to the Resource Targeting Model. This model is used by AIR as our primary method of assessing risk areas; thereby helping us determine where to focus our efforts. The Resource Targeting Model also provides the basis for determining the frequency of evaluations and audits to be preformed. Our goal is to re-evaluate the Resource Targeting Model, to streamline it, and make it more efficient and effective.
3. As a step in becoming more efficient, AIR will assess the benefit of changes in ACSEP team structure, duration of evaluations, and surveillance intervals.

- The ACSEP data further supports many of the proposed changes to the Part 21 regulations, designed to strengthen the quality system requirements. An NPRM proposing these changes is currently in the executive coordination cycle.

3. Data Analysis — Manufacturing Facilities

3.1 Safety Related Noncompliances

Of the 453 noncompliances recorded at production approval holder facilities in FY 2005, there was one safety-related noncompliance which identified an immediate safety concern. The safety-related noncompliance was recorded for failure to report failures as required by 14 CFR § 21.3.

3.2 Systemic Noncompliances

There were 277 systemic noncompliances reported in FY 2005. Of all of the systemic noncompliances recorded, 85 percent were recorded within seven of the system elements or their sub elements. These seven system elements or sub elements are displayed in *Figure 3-1*.

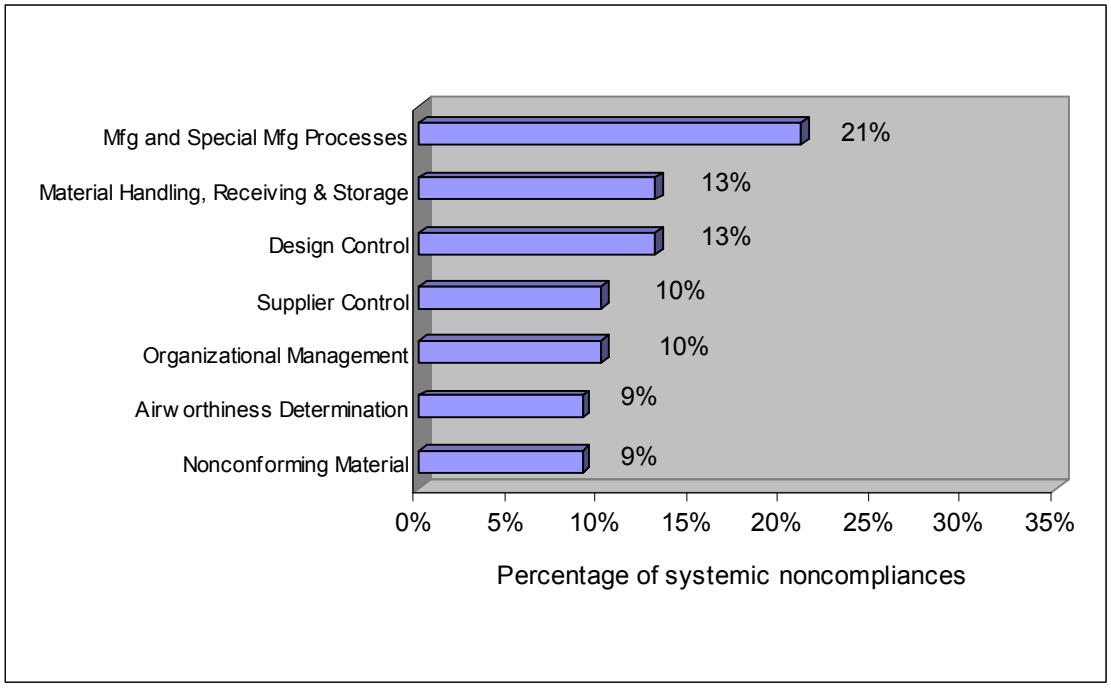

Figure 3-1.— Systemic noncompliances — all facility types.

3.3 Isolated Noncompliances

There were 151 isolated noncompliances reported in FY 2005. Of all of the isolated noncompliances recorded, 79 percent were recorded within seven of the system elements or their sub elements. These seven system elements or sub elements are displayed in *Figure 3-2*.

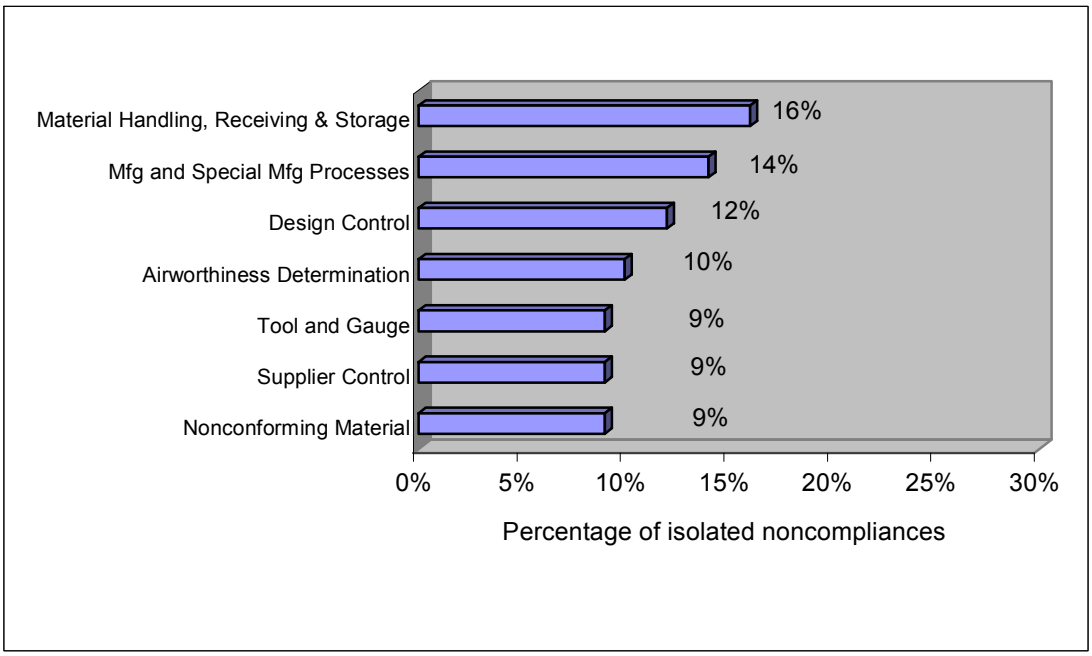

Figure 3-2.— Isolated noncompliances — all facility types.

3.4 CFR-Based Noncompliances

There were 24 CFR-based noncompliances reported in FY 2005. *Table 3-1* lists those system elements or sub elements where the CFR-based noncompliances were reported. Of the 24 CFR-based noncompliances reported, 12 were noted in the Manufacturing Processes and Design Control system elements.

TABLE 3-1.—CFR-based noncompliances

Element	Number of CFR-based noncompliances reported
Manufacturing and Special Manufacturing Processes	6
Design Data Control	6
Organizational Management	5
Airworthiness Determination	3
Non-Destructive Inspection	2
Statistical Quality Control	1
Testing	1

3.5 System Element Noncompliances

3.5.1 Similarity Among Approval Types

Tables 3-2 through *3-4* show the most prevalent noncompliances, as defined by the total number of noncompliances, for each of the approval types. There is no table presented for APIS because there were no noncompliances recorded at an APIS during FY 2005.

Table 3-5 shows the most prevalent noncompliances for all of the approval types combined. It is apparent from this presentation that the distribution of noncompliances for all of the approval types combined is similar to that for any individual approval type alone. *Table 3-6* summarizes the data contained in the figures by comparing the most prevalent noncompliances among the various facility types.

Please note that direct comparison of the approval types cannot be done with these charts. As revealed in the FY 1999 Annual ACSEP Report, the proportion of facilities with systemic noncompliances is strongly related to system complexity. Because there are significant differences in system complexity among the various approval types, these charts cannot be used to compare compliance between approval types.

TABLE 3-2.—Counts of PMA noncompliances.

System Element	Systemic Noncompliance	Isolated Noncompliance	CFR-Based Noncompliance
Organizational Management	11	7	1
Design Control	18	9	3
Software Quality Assurance	1	0	0
Manufacturing and Special Manufacturing Processes	25	8	3
Material Handling, Receiving & Storage	18	10	0
Airworthiness Determination	15	10	0
Statistical Quality Control	0	3	1
Tool & Gauge	8	9	0
Testing	0	1	0
Nondestructive Testing	2	1	2
Nonconforming Material	8	5	0
Supplier Control	17	4	0
TOTAL	123	67	10

TABLE 3-3.—Counts of PC noncompliances.

System Element	Systemic Noncompliance	Isolated Noncompliance	CFR-Based Noncompliance
Organizational Management	6	0	2
Design Control	7	3	0
Software Quality Assurance	1	1	0
Manufacturing and Special Manufacturing Processes	20	8	1
Material Handling, Receiving & Storage	10	9	0
Airworthiness Determination	5	2	0
Statistical Quality Control	2	1	0
Tool & Gauge	4	3	0
Testing	3	0	1
Nondestructive Testing	0	3	0
Nonconforming Material	5	7	0
Supplier Control	4	9	0
TOTAL	67	46	3

TABLE 3-4.—Counts of TSO authorization noncompliances.

System Element	Systemic Noncompliance	Isolated Noncompliance	CFR-Based Noncompliance
Organizational Management	12	3	2
Design Control	11	7	3
Software Quality Assurance	2	2	0
Manufacturing and Special Manufacturing Processes	16	6	3
Material Handling, Receiving & Storage	9	6	0
Airworthiness Determination	6	4	3
Statistical Quality Control	2	0	0
Tool & Gauge	6	3	0
Testing	2	3	0
Nondestructive Testing	0	0	0
Nonconforming Material	12	2	0
Supplier Control	9	2	0
TOTAL	87	38	11

TABLE 3-5.—Counts of all noncompliances.

System Element	Systemic Noncompliance	Isolated Noncompliance	CFR-Based Noncompliance
Organizational Management	29	10	5
Design Control	36	19	6
Software Quality Assurance	4	3	0
Manufacturing and Special Manufacturing Processes	61	22	6
Material Handling, Receiving & Storage	37	25	0
Airworthiness Determination	26	16	3
Statistical Quality Control	4	4	1
Tool & Gauge	18	15	0
Testing	5	4	1
Nondestructive Testing	2	4	2
Nonconforming Material	25	14	0
Supplier Control	30	15	0
TOTAL	277	151	24

TABLE 3-6.—Summary of the most prevalent systemic noncompliances — FY 2005

System Element	PC	PMA	TSOA
Mfg. And Special Mfg. Processes	X	X	X
Material Handling, Receiving and Storage	X	X	X
Supplier Control		X	X
Nonconforming Material	X		X
Design Data	X	X	X
Airworthiness Determination	X	X	
Organizational Management	X	X	X
X = One of the top six systemic noncompliances			

3.6 Analysis of Evaluation Criteria

The following subsections contain lists of the most significant criteria noncompliances at any given facility type. This data can be used by industry to focus corrective action and by the FAA for resource allocation initiatives. The data is presented in two forms: a focus on individual approval types in which systemic noncompliances are separated by approval type; and a focus on individual facilities with applicable procedures in place. For clarity, only the top noncompliances are reported in these subsections.

3.6.1 Systemic Noncompliances

The ten evaluation criteria most frequently recorded with systemic noncompliances are presented in *Table 3-7*. These ten criteria accounted for 47 percent of all reported systemic noncompliances.

TABLE 3-7.— Most reported criteria with systemic noncompliances.

Rank	Criteria	Description	Number of Systemic Noncompliances	Percent of Systemic Noncompliances	Percent of All Facilities
1	409	Inspection methods	16	6%	8%
1	413	Receiving inspection	16	6%	8%
2	116	Internal audit	14	5%	7%
2	530	Nonconforming products controlled	14	5%	7%
2	602	Initial and periodic evaluation of suppliers	14	5%	7%
3	202	Technical data file	13	5%	7%
4	508	Tool and gauge calibration	12	4%	6%
5	402	Special processes identified and defined	11	4%	6%
5	427	Part marking	11	4%	6%
6	405	Manufacturing records	10	3%	5%

3.6.2 A Facility Focus

This section lists the criteria noncompliances separated by approval type (*Tables 3-8 to 3-10*). This allows the reader to focus on the noncompliances pertinent to a particular approval type without bias from the other approval types. For example, the data from the relatively few PC holders is not skewed by the data from the much larger population of PMA holders. For clarity, only the top noncompliances are reported in this section.

TABLE 3-8.—Predominant systemic noncompliances — PC holders

Rank	Criteria	Description	Number of Systemic Noncompliances	Percent of Systemic Noncompliances for PC Holders	Percent of PC Holders with Noncompliances
1	116	Internal audit	4	6%	13%
1	402	Special processes identified and defined	4	6%	13%
2	403	New or changed processes approved	3	4%	10%
2	413	Receiving inspection	3	4%	10%
3	206	Minor design changes	2	3%	7%
3	409	Inspection methods	2	3%	7%
3	412	Environmental controls	2	3%	7%
3	416	Control of shelf life materials	2	3%	7%
3	427	Part marking	2	3%	7%
3	516	Test records	2	3%	7%
3	529	MRB	2	3%	7%
3	601	Use of approved suppliers	2	3%	7%
3	602	Initial and periodic evaluation of suppliers	2	3%	7%

TABLE 3-9.—Predominant systemic noncompliances — PMA holders

Rank	Criteria	Description	Number of Systemic Noncompliances	Percent of Total Systemic Noncompliances for PMA Holders	Percent of PMA Holders with Noncompliances
1	202	Technical data file	9	7%	8%
1	413	Receiving inspection	9	7%	8%
1	602	Initial and periodic evaluation of suppliers	9	7%	8%
2	409	Inspection methods	7	6%	6%
2	427	Part marking	7	6%	6%
2	530	Nonconforming products controlled	7	6%	6%
3	402	Special processes identified and defined	6	5%	5%

TABLE 3-10.—Predominant systemic noncompliances — TSO authorization holders

Rank	Criteria	Description	Number of Systemic Noncompliances	Percent of Total Systemic Noncompliances for TSO Authorizations	Percent of TSO Authorizations with Noncompliances
1	530	Nonconforming products controlled	6	7%	15%
2	116	Internal audit	5	6%	13%
2	409	Inspection methods	5	6%	13%
2	508	Tool and gauge calibration	5	6%	13%
3	206	Minor design changes	4	5%	10%
3	405	Manufacturing records	4	5%	10%
3	413	Receiving inspection	4	5%	10%
4	401	Work instructions control manufacturing process	3	3%	8%
4	532	Management review of nonconforming data	3	3%	8%
4	601	Use of approved suppliers	3	3%	8%
4	602	Initial and periodic evaluation of suppliers	3	3%	8%

3.6.3 A Facility Focus (Procedures In Place)

This section lists the criteria noncompliances separated by approval type but only takes into account the number of facilities that had applicable procedures in place (*Tables 3-11 to 3-13*). This allows the reader to focus on the noncompliances pertinent to a particular approval type with applicable procedures in place without bias from the other approval types. For example, the data from the relatively few PC holders is not skewed by the data from the much larger population of PMA holders nor is it skewed by the assumption that all PC holders have applicable procedures in place for all criteria. For clarity, only the top noncompliances are reported in this section.

TABLE 3-11.—Predominant systemic noncompliances — PC holders with applicable procedures

Rank	Criteria	Description	Number of Systemic Noncompliances	Percent of Systemic Noncompliances for PC Holders	Percent of PC Holders with Procedures
1	505	PRE-control method	1	1%	17%
2	116	Internal audit	4	6%	15%
2	402	Special processes identified and defined	4	6%	15%
3	409	Inspection methods	4	6%	14%
4	403	New or changed processes approved	3	4%	11%
4	413	Receiving inspection	3	4%	11%

TABLE 3-12.—Predominant systemic noncompliances — PMA holders with applicable procedures

Rank	Criteria	Description	Number of Systemic Noncompliances	Percent of Systemic Noncompliances for PMA Holders	Percent of PMA Holders with Procedures
1	602	Initial and periodic evaluation of suppliers	9	7%	9%
2	202	Technical data file	9	7%	9%
3	413	Receiving inspection	9	7%	8%
4	116	Internal audit	5	4%	7%
5	530	Nonconforming products controlled	7	6%	6%
6	409	Inspection methods	7	6%	6%

TABLE 3-13.—Predominant systemic noncompliances — TSO authorization holders with applicable procedures

Rank	Criteria	Description	Number of Systemic Noncompliances	Percent of Total Systemic Noncompliances for TSO Authorizations	Percent of TSO Authorizations with Procedures
1	530	Nonconforming products controlled	6	7%	17%
2	116	Internal audit	5	6%	17%
2	409	Inspection methods	5	6%	14%
2	508	Tool and gauge calibration	5	6%	14%
3	206	Minor design changes	4	5%	11%
3	405	Manufacturing records	4	5%	11%
3	413	Receiving inspection	4	5%	11%

3.7 Delegated Facilities

This was the eighth year that data was collected for facilities with engineering delegation authority. Delegated facilities include Designated Alteration Stations (DAS), Special Federal Aviation Regulation No. 36 (SFAR-36) facilities, and Delegation Option Authorization (DOA) facilities. For this fiscal year, 15 systemic noncompliances, 10 isolated noncompliances, and 3 CFR-based noncompliances were recorded. A summary of the data follows.

3.7.1 Designated Alteration Stations (DAS) Facilities

Six evaluations were performed at DAS facilities. Fifteen systemic noncompliances, 9 isolated noncompliances, and 3 CFR-based noncompliances were recorded.

Data for all DAS recorded noncompliances are presented by criteria in Table 3-14.

TABLE 3-14.—DAS noncompliances by criteria

Safety-Related	Systemic	Isolated	CFR-Based	Description
	1D1			Technical/repair data approved
	1D20			Flight safety program
	2D25			Proper completion of STC certificates
	3D2			Classification of data being approved
	4D1			Control of changes to type design data
	4D2			Major/minor determination
	6D2			Conformity inspections documented
	7D3			Appropriate airworthiness certificate for purpose flown
	8D1			Submittal of required information to FAA Statements of Conformity submitted
		1D19		Records retention
		2D10		Coordination of project milestones/requirements
		2D13		Coordination between technical disciplines
		3D1		Control of type design data
		3D5		Technical/repair data is approved
		6D2		Conformity inspections documented

Safety-Related	Systemic	Isolated	CFR-Based	Description
		7D3		Appropriate airworthiness certificate for purpose flown
		9D2		Availability of Instructions for Continued Airworthiness
		10D1		Internal auditing program
			1D1	Use of FAA-approved Procedure Manual/Handbook
			1D2	Current Procedure Manual/Handbook
			9D7	Failure reporting

3.7.2 Special Federal Aviation Regulation No. 36 (SFAR-36) Facilities

Three evaluations were performed at SFAR-36 facilities. No Safety-Related noncompliances, no systemic noncompliances, 1 isolated noncompliance, and no CFR-based noncompliances were recorded.

Data for all SFAR-36 recorded noncompliances are presented by criteria in Table 3-15.

TABLE 3-15.—SFAR-36 noncompliances by criteria

Safety-Related	Systemic	Isolated	CFR-Based	Description
		3D5		Technical/repair data approved

3.7.3 Delegation Option Authorization (DOA) Facilities

There were no DOA facility evaluations for this reporting period.

4. Improvement Emphasis

The goal of the ACSEP is to support continuing operational safety and promote continuous improvement.

4.1 Industry Feedback

As part of the ACSEP Quality Improvement Program, a performance feedback report (FAA Form 8100-7, FAA ACSEP Evaluation Feedback Report) is provided to each individual organization when they are notified that an evaluation is scheduled to take place. Each facility evaluated is requested to use this report to critique the FAA ACSEP evaluation process. The feedback report is used to record the facility's impression for each step of the evaluation, from notification to the post-evaluation conference. A question concerning the professionalism of the ACSEP evaluation team is also included on the report. The facility's management is encouraged to complete the report and return it for analysis.

Overall, the feedback was very good. As with the previous year, greater than 99 percent of the responses were "Satisfactory" or better (see *Table 4-1*). *Figure 4-1* gives the average rating for each of the feedback categories measured and an overall average rating. The data presented remains consistent from the previous years.

The feedback report also allows for the inclusion of comments/suggestions. Many very positive comments were received regarding the overall knowledge and professionalism displayed by the ACSEP teams. There were very few suggestions provided this year. Examples of suggestions submitted include:

- In the pre-evaluation phase, a daily plan/agenda would help in the coordination of schedules.
- For easier reading, the Executive Summary should have a different format.
- Would like the list of follow-up actions given to the PI.
- The method for determining the duration of the ACSEP should be re-evaluated.

NOTE: The Production and Airworthiness Division, AIR-200, will evaluate and disposition these comments/suggestions independent of this report.

TABLE 4-1.—Distribution of industry feedback

Rating	Percentage
Excellent	68.4%
Good	27.3%
Satisfactory	3.5%
Poor	0.7%
Unsatisfactory	0.0%

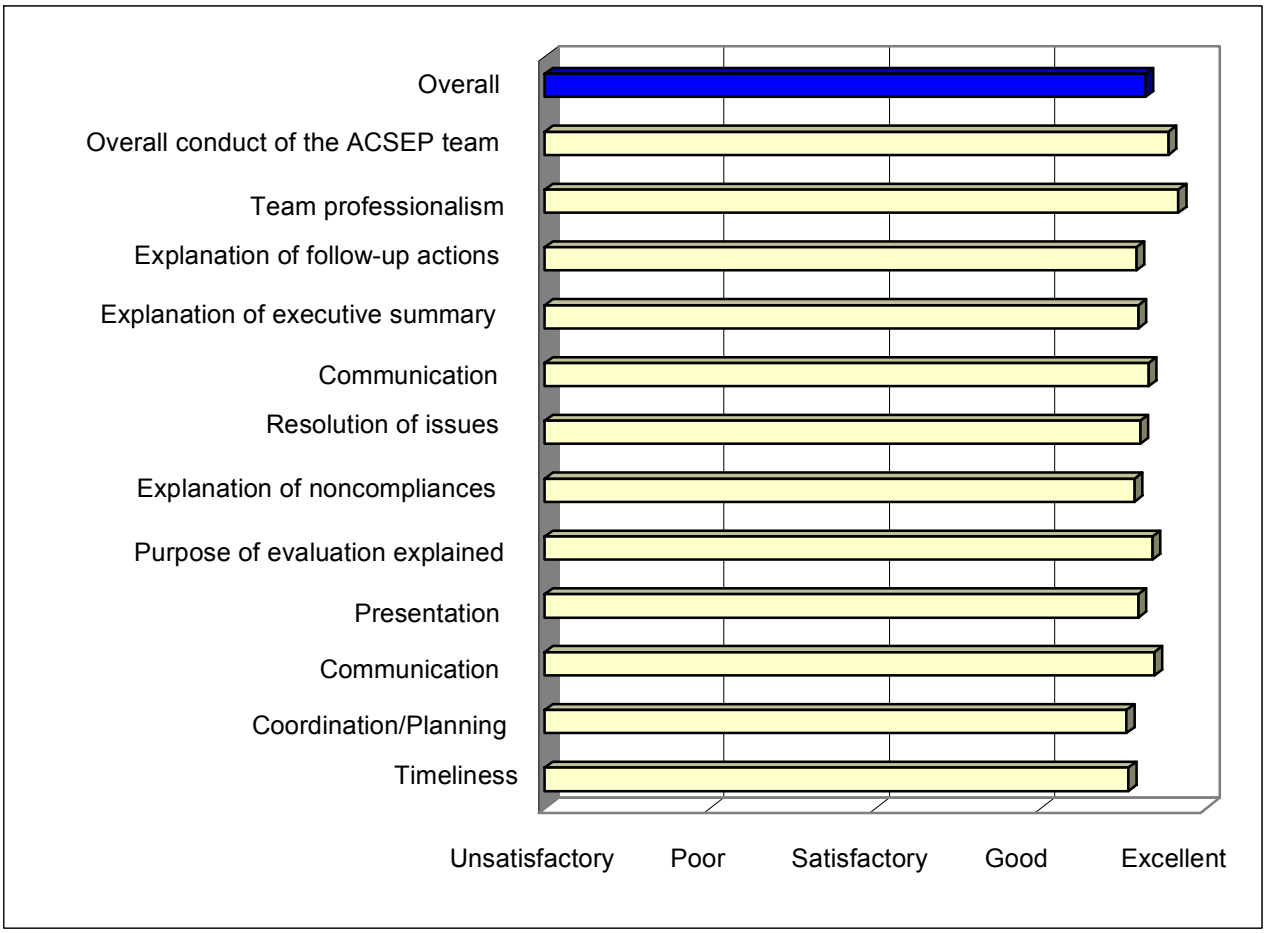

Figure 4-1.—ACSEP as graded by industry.

4.2 Lessons Learned

An additional part of the continuous improvement process is the gathering and analyzing of lessons learned that the evaluation team documented at the conclusion of each ACSEP evaluation. Each ACSEP evaluation team submits a "lessons learned" form that records the team's general assessment of the evaluation, difficulties with the order, system elements not evaluated, and any proposed new criteria. *Figures 4-2 through figure 4-5* show the trend in these lessons learned from FY 2000 to FY 2005.

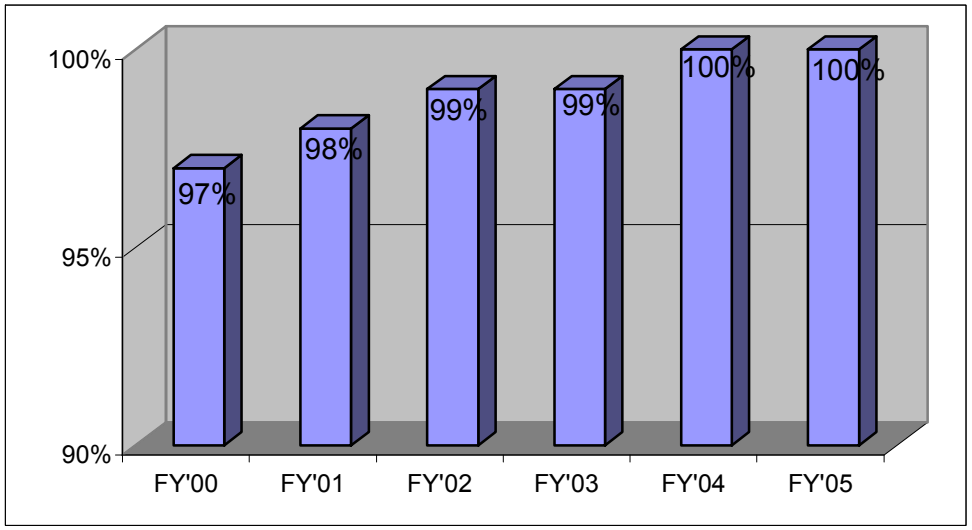

Figure 4-2.—Trend of lessons learned — favorable experiences.

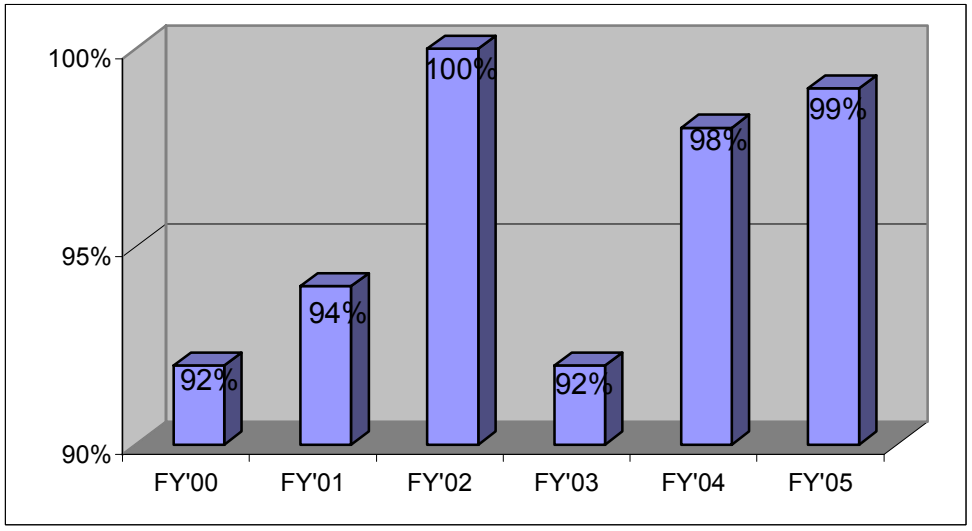

Figure 4-3.—Trend of lessons learned — no difficulties with Order 8100.7

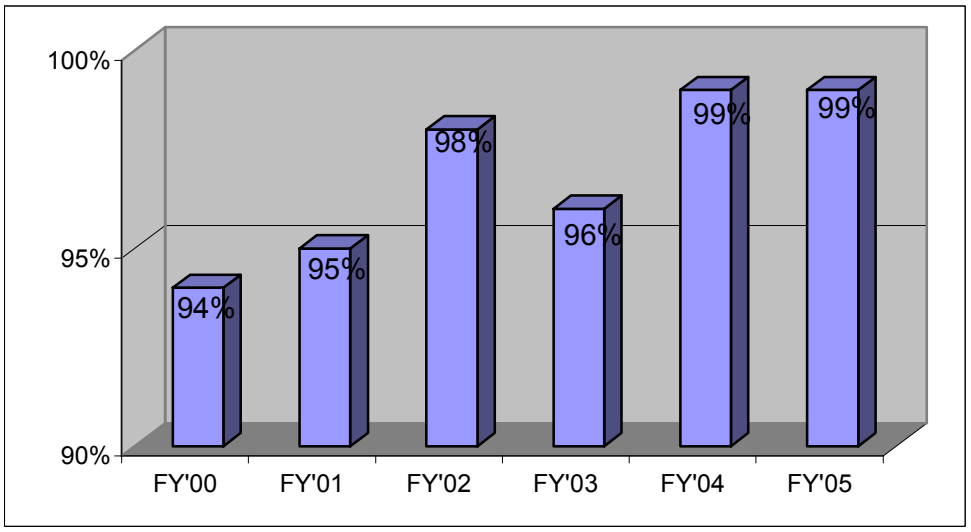

Figure 4-4.—Trend of lessons learned — evaluation completed.

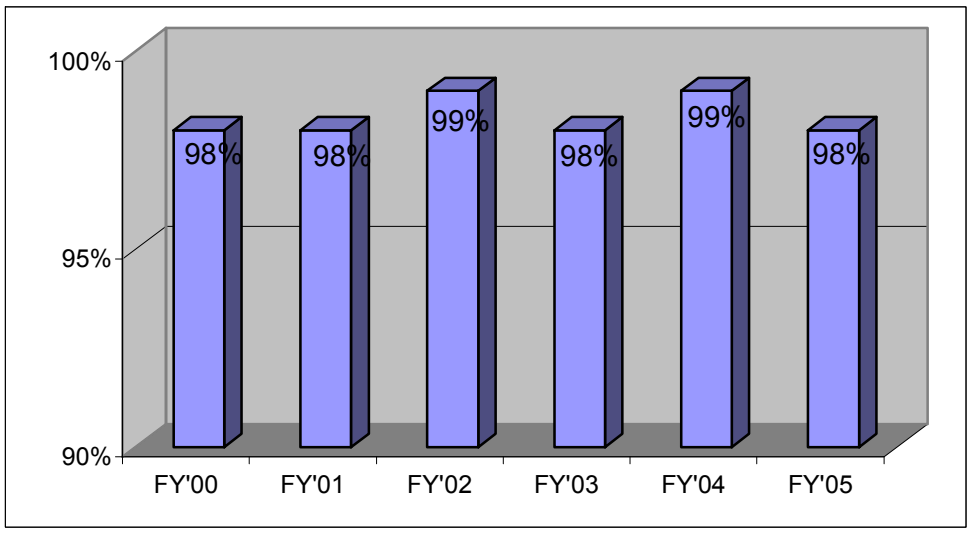

Figure 4-5.—Trend of lessons learned — no new criteria needed.

The percentage of teams reporting favorable experiences was consistent from last year. There was a slight increase in the reporting of no difficulties encountered using the Order. This can be attributed to the teams' increased experience using the revised Order between FY 2004 and FY 2005. The percentage of evaluations completed was also consistent from last year. As in previous years, the evaluation teams did not, as a whole, document the need for new criteria.

Figure 4-6 presents the number of ACSEP system elements not completed. Only two evaluations were not completed in their entirety. This was attributed to time constraints.

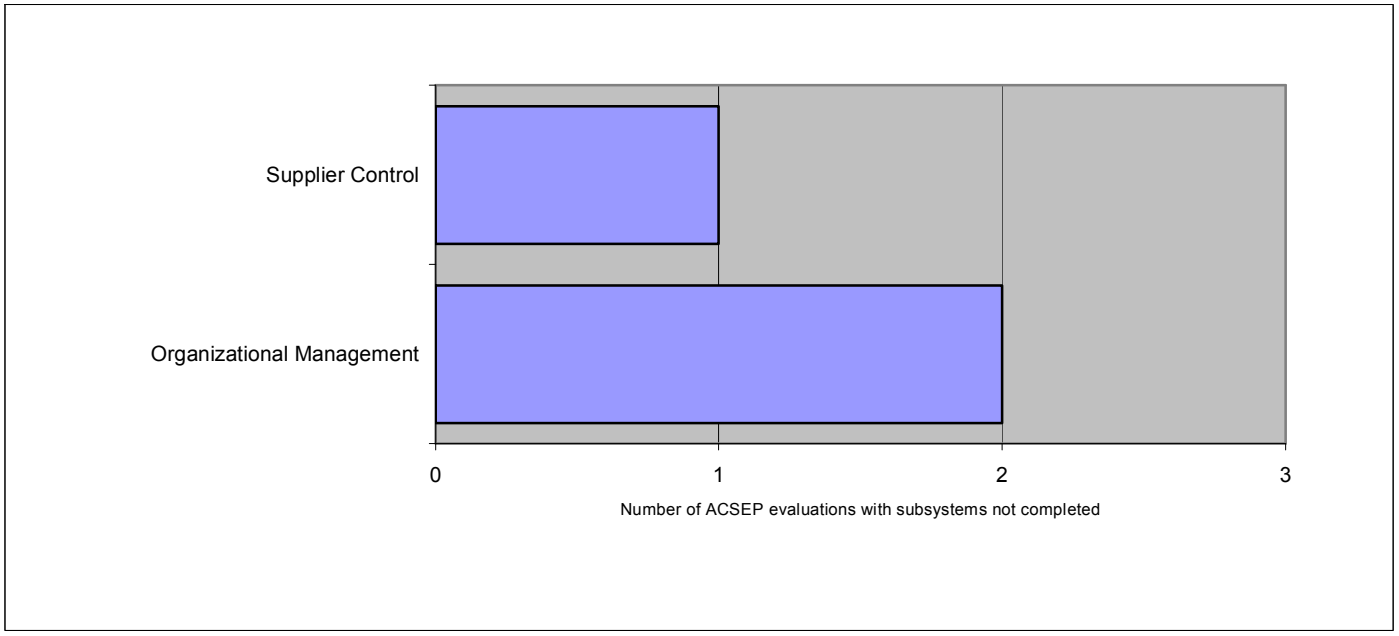

Figure 4-6.— Distribution of subsystems not evaluated.

Table 4-2 presents a detailed breakdown of comments received with the Lessons Learned.

TABLE 4-2.—Comments received from lessons learned sheets

General Issues/Comments	**FY'00**	**FY'01**	**FY'02**	**FY'03**	**FY'04**	**FY'05**
Time scheduled at facility was too short or too long	7%	6%	2%	5%	2%	7%
Computer or ACSEP software issues	2%	1%	0%	1%	0%	0%
Logistics; no escorts or QC mgr., facility not notified	1%	1%	1%	0%	0%	0%
QC Manual: incomplete, outdated, conflicts with other procedures	1%	1%	0%	0%	0%	0%
Production is very low, inactive, or inappropriate for audit	2%	1%	0%	1%	0%	1%
Management defensive/uncooperative	0%	0%	0%	0%	0%	0%
ISO 9000 certification better prepared the facilities for ACSEP evaluation	1%	2%	0%	0%	0%	0%
Recommend extending evaluation frequency	0%	0%	0%	1%	0%	0%
Miscellaneous other issues	1%	2%	0%	0%	1%	2%
Difficulty with Order	**FY'00**	**FY'01**	**FY'02**	**FY'03**	**FY'04**	**FY'05**
Criteria; add, incorrect, or system element issues	2%	3%	1%	7%	1%	2%
ACSEP team size too big for facility	1%	0%	0%	1%	1%	0%
Noncompliances; confusion with definitions	1%	2%	0%	1%	0%	0%
Confusion about recording multiple occurrences of noncompliances	0%	0%	0%	1%	0%	0%
Instructions for Form 8100-6 not in Order 8100.7	4%	3%	0%	1%	1%	0%
Form 8100-4 not clear/not necessary	4%	3%	0%	1%	0%	0%

APPENDIX A - DEFINITIONS

Approved Production Inspection System (APIS) – Federal Aviation Administration (FAA) production approval issued to a manufacturer of an aircraft, aircraft engine, or propeller being manufactured under a type certificate only.

Assigned Engineer – an FAA engineer to whom the Aircraft Certification Office manager has assigned responsibility relating to ACSEP evaluations at a particular design approval facility.

Certification Related Noncompliance – an occurrence of FAA-approved data not in compliance to the Code of Federal Regulations (CFR).

Compliance – for the purposes of this report, compliance refers to a facility's business practices being consistent with published procedures and/or policies. These procedures/policies include: internal procedures/policies not requiring FAA approval, FAA-approved data, and the CFR.

Criteria – the basic element of an ACSEP evaluation. Criteria are used to plan the depth of the evaluation and to document the results of the evaluation in a standardized manner. The criteria are grouped into systems and system elements.

Delegated Facility – a facility undertaking DOA, DAS, or SFAR-36 activity.

Delegation Option Authorization (DOA) – an organization or facility authorized by the FAA to accomplish type, production, and airworthiness certification of certain products as specified in CFR § 21.231(a).

Designated Alteration Station (DAS) – an organization or facility authorized by the FAA to issue supplemental type certifications, experimental certificates, and amended standard airworthiness certificates in accordance with its FAA-approved procedures manual.

Established Industry Practice – a widely followed method of operating that achieves consistent performance of specific functions (i.e., calibration recall system, internal audit system, and statistical process control).

Facility – for this report, any production approval holder, delegation, or priority part supplier.

APPENDIX A - DEFINITIONS (CONTINUED)

Isolated Noncompliance – a noncompliance to the CFR, FAA-approved data, the facility's internal procedures, or purchase order requirements that is not safety-related and is of an isolated or nonsystemic nature, i.e., is not pervasive or repeatable, and does not represent a breakdown in the quality control or inspection system.

Noncompliance – for the purposes of this report, noncompliance refers to a facility's business practices being inconsistent with published procedures and policies at the time of the ACSEP evaluation. These procedures and/or policies include: internal procedures/policies not requiring FAA approval, FAA-approved data, and the CFR.

Noncompliance Rate – the proportion of facilities where at least one business practice was inconsistent with published procedures or policies, or any portion thereof, at the time of the ACSEP evaluation. These procedures and/or policies include: internal procedures not requiring FAA approval, FAA-approved data, and the CFR.

Nonobservance – a failure to comply with self-imposed procedures that are related to, but not required by, the applicable production approval, delegated facility approval, or quality requirements from a parent manufacturing maintenance facility.

Parts Manufacturer Approval (PMA) – an FAA production and design approval issued to manufacturers who produce replacement or modification parts, equipment, components, materials, part processes (replacement and modification, and appliances).

Principal Inspector (PI) – an FAA aviation safety inspector who has been assigned certificate management and/or surveillance responsibility for a PAH, associate facility, or priority part supplier.

Production Approval Holder (PAH) – the holder of a PC, APIS, PMA, or TSO authorization, who controls the design and quality of a product or part thereof.

Production Certificate (PC) – an FAA production approval issued to a manufacturer of aircraft, aircraft engines, or propellers that has had its Quality Control system examined and approved by the FAA, and that holds one or more of the following: a current type certificate, rights to the benefits of a type certificate under a licensing agreement, or a supplemental type certificate.

APPENDIX A - DEFINITIONS (CONTINUED)

Production Certificate Extension (PCEX) – an FAA-approved extension of a specific manufacturer's PC to another facility.

Safety Related Noncompliance – a noncompliance to the CFR, FAA-approved data, the facility's internal procedures, or purchase order requirements that compromises immediate continued operational safety and requires immediate corrective action.

Special Federal Aviation Regulation No. 36 (SFAR-36) – an organization or facility authorized by the FAA to approve major repairs on a product or article in accordance with its FAA-approved procedures manual.

System – the highest level of grouping for the ACSEP criteria. Systems comprise the individual disciplines under which the criteria fall. There are six systems: Management, Engineering, Manufacturing, Quality, Service/Product Support, and Communication with the FAA.

System element – a logical grouping of several criteria into functional areas. There are 6 system elements for production approval holders and 10 system elements for delegated facilities.

Systemic Noncompliance – a noncompliance with an applicable CFR, FAA-approved data, the facility's internal procedures, or purchase order requirements that is not safety-related and is systemic in nature, i.e., is pervasive, repeatable, and represents a breakdown in the quality control or inspection system.

Technical Standard Order (TSO) a*uthorization*– an FAA design and production approval issued to a manufacturer for an article which has been found to meet a specific FAA Technical Standard Order.

FY 2005 ACSEP Report Feedback Information

In a constant effort to improve the Aircraft Certification System Evaluation Program (ACSEP), you are asked to provide any relevant feedback to the attached report. This feedback could include views for additional areas of analysis; clarification of subject matter, data, and/or analysis; or general comments or remarks. We appreciate your input.

Feedback:

Check as appropriate

☐ Additional pages attached. Number of pages. _____ ☐ I would like to discuss the above. Please contact me.

Submitted by:_____ Date:_____

Organization:_____

Address:_____

Street P.O. Box City State Zip Code

Phone number where we can reach you during the day: ( )_____Fax ( )_____

Mail to: **Federal Aviation Administration**
AIR-200, ACSEP Team; Room 815
800 Independence Ave., S.W.
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AIR-200, ACSEP Team; Room 815
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